

The green-tech revolution

Why an investment in the planet
is an investment in your business



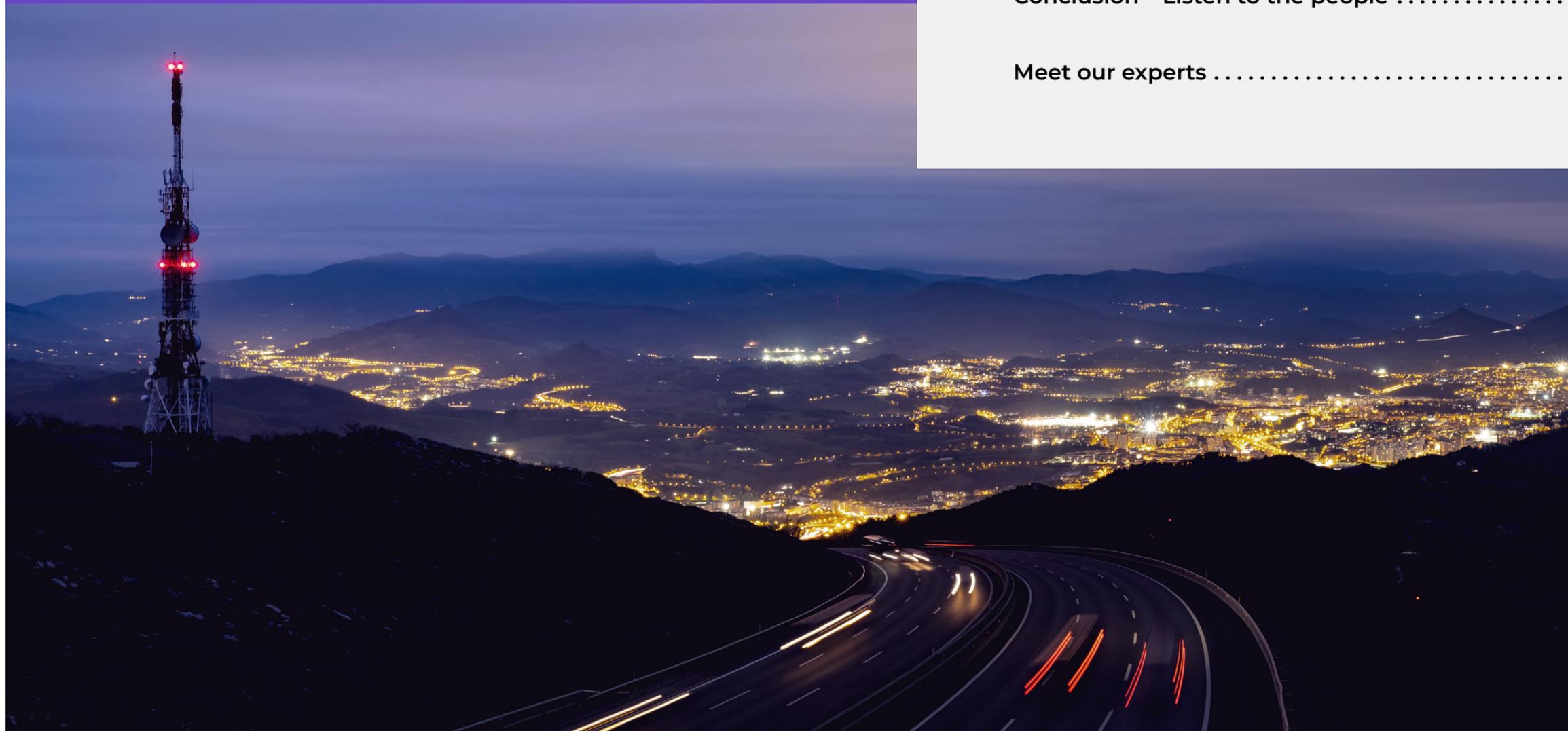
About Expleo

Expleo is a trusted partner for end-to-end, integrated engineering, quality services and management consulting for digital transformation. We help businesses harness unrelenting technological change to successfully deliver innovations that will help them gain a competitive advantage and improve the everyday lives of people around the globe. We operate in 30 countries.

expleogroup.com

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Introduction

Businesses and technologists have a responsibility to deliver value to their customers. But for innovation to deliver genuine value, they must take their direction from two types of insight.

The first type is the knowledge of systems and technologies and – to some extent – science to understand what may become technically possible.

But the second is perhaps even more important; and that is understanding the future needs and demands of society and customers, be they consumers, businesses or governments. Without this information, it's difficult for companies to know how to tailor their solutions to deliver services that people really want and need.

At Expleo, we're always looking for ways to better support and advise our clients in their journeys toward quality-driven digital transformation. So we decided to conduct a consumer survey, asking everyday technology users about the impact technology has had on their lives over the past decade and whether it has lived up to its promises. We also wanted to understand people's expectations for the future, especially when it comes to the role technology plays in solving challenges and improving everyday life.

We tailored our questions to a broad spectrum of sectors, from banking to transport, securing granular insights from consumers pertaining to development in these areas. But one overarching theme was clear. Whether it's developing bespoke problem-solving technologies or using IT to 'eco-proof' existing sectors, people want future innovations to focus on minimising climate damage.

Our goal now is to help businesses rise to this challenge, smash expectations, and build a better future for people and the planet through the use of technology.

1) 2000 interviews were conducted using an online methodology amongst a nationally representative sample of UK adults (including Northern Ireland). All respondents were aged 18 and over. Quotas were applied for gender, age of respondent and the region in which they reside to ensure that the sample is nationally representative.

Tech for the planet's sake



In the future,
43%
of respondents said
they would like to see a
**technological
solution for the
climate crisis**



40%
of those surveyed
agreeing that technology
innovations designed to
**address plastics
in the ocean**
is something they want
to see in the next decade



When asked to what extent
do you agree with the statement
**“technology innovations
are the best way for the
UK to meet its carbon
emissions target by 2050”,**
> 56%
of respondents agreed
with just <7% disagreeing

Stick to cars, and ditch the spaceships, would be the consumers' message to Elon Musk – because what the public want most from technology are solutions to mitigate climate change rather than an intergalactic future from the Jetsons.

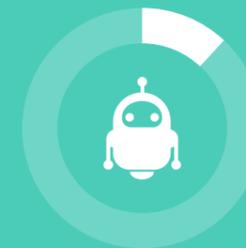
Increased awareness of, and sensitivity to the rate of ecological destruction is clear to see, with over a third (43%) of respondents confirming that a “solution for the climate crisis” would be their preferred technological innovation of the future. Another 56% of people agreed that technological innovations are the best way for the UK to meet its 2050 net-zero carbon emissions target.

Combatting plastic waste and emissions from fossil fuels were also among people's biggest priorities for future technologies, with 40% of people saying they'd like to find a way to remove plastics from the oceans, and 41% saying they'd like to see advances in renewable energy over the next decade.

Smart meters, meanwhile – which by law, will be in every home come 2024²⁾ – were praised by over 80% of people for adding value to their lives, despite a beleaguered public reputation, due to their long-term potential to reduce energy use and CO₂ emissions through better energy management.

Headline grabbing technology did not, however, fare well in our research. Despite a colossal amount of investment and hype around the possibility of holidaying to Mars or the Moon, just 15% of people are interested in space tourism. Even fewer (11%) are excited about the prospect of domestic robotics in the home to automate daily chores such as doing the dishes. And, only 19% are optimistic about the prospect of self-driving vehicles.

2) <https://www.bbc.com/news/business-49721436#>



Only **11%** of people want to see more robotics in the home over the next decade



Only **15%** want to be able to tour space over the next decade

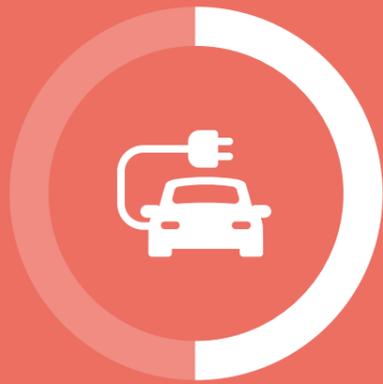
People are enthusiastic about future tech that will help deal with climate change but are very sceptical about the use of home robotics and smart home technologies. This suggests that the global tech companies working hard to push these into our lives will have to greatly improve their offerings and marketing if they are to succeed.

Dr Iain Pearson, Futurologist



But in the age of Blue Planet, people almost universally favour less exciting tech that solves real-world problems and offers genuine utility, over flashy gadgets or novelties such as home robotics, virtual reality or home entertainment. It is therefore vital that businesses in all industries prioritise utility, problem solving and value. It really is a case of smart meters over smart TVs.

Greener and cleaner



Almost **50%**
of people agreed that
EV innovations
in the past
decade

have been either somewhat
useful or very useful



55%
of survey respondents
also noted that
Taxi-hailing
apps

have been useful
– a means to reduce
vehicle ownership

De-carbonising the atmosphere is now a major priority for many governments, with the transport and motoring industries at the epicentre, given the level to which they contribute to global greenhouse gas emissions³).

The true reality of how transport impacts the environment was felt when the world went into lockdown in response to the COVID-19 outbreak, with restrictions on car travel leading to a 7.3% drop in global emissions between April and May, according to a study from the University of East Anglia⁴.

The positive news is that we're already well on our journey towards greener ways of travelling, at least on the roads.

EV development is in full swing, and our research shows that with better infrastructure and government incentives in place – such as the new £6000 scrappage scheme⁵ being considered by Boris Johnson – consumers are likely to make the switch from carbon to electric vehicles, with a third of people saying that the increased battery life of EVs is something they're looking forward to over the next 10 years.

3) <https://data.worldbank.org/indicator/EN.CO2.TRAN.ZS>

4) <https://www.uea.ac.uk/about/-/covid-19-crisis-causes-17-drop-in-global-carbon-emissions>

5) <https://www.thisismoney.co.uk/money/cars/article-8398385/Boris-Johnson-considering-slashing-prices-new-EVs-6-000.html>



Market growth is always slow at first and electric and hybrid cars have kept with that.

Dr Iain Pearson, Futurologist

Unfortunately, there's currently a shortage of commercial EVs available in the UK, which is hindering progress. In fact it's more likely to be within commercial fleets that we'll see the biggest, quickest changes.

Even so, with improved battery performance, continued infrastructure and charging facilities, the impact of EVs could be astronomical, not only by cutting carbon emissions, but transforming the way we manage, store, distribute and pay for electricity as more people swap petrol station fill-ups with home charging, wireless charging or even using the capabilities of connected vehicles for per-mile payment models.

One of the ground-breaking innovations Expleo is currently supporting major vehicles manufacturers (OEMs) within the UK, is Vehicle to Grid (V2G) technology: a reversible charging solution that can not only power electric vehicles but enables them to send surplus electricity back to the grid, as a source of renewable energy, and also to charge at times which use less carbon intensive forms of power generation.

Other sustainable solutions our engineering experts are able to support include energy-efficient EV charging points, light weighting technology, electrical power and signal distribution, as well as environmental, electro-magnetic and climate tests & compatibility.

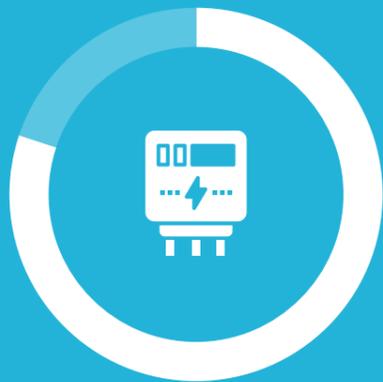
Rachel Eyres, Client Director and Market Unit Leader (Infrastructure), Expleo UK Quality Business

Wider adoption of public transport, enabled by 'smart' solutions like public driverless pod systems, is also expected to help combat emissions from cars. This makes use of tried and tested methods like carpooling, which 10% of respondents in our survey were positive about.

Dr Iain Pearson, Futurologist:

Future transport will mostly be electric, either using batteries or powered inductively from pads in the road. The majority who already like taxi-hailing would likely jump at public driverless pod systems, and cheap driverless pods on smart infrastructure will compete in urban areas with much more expensive self-driving cars. These could help the environment, reduce road deaths, reduce congestion and improve social inclusion.

Cleaner, greener and smarter



80%
of people say
smart meters
have been
useful
over the past 10
years, despite their
beleaguered public
reputation.



Only **22%**
of people were
interested in future
investment into
other smart
technologies
in the home
showing a mature
appreciation of the
benefits of smart meters

In tandem with transport, another vital area where society is on the brink of potentially huge, carbon-reducing transformation is energy. Many changes in how it is produced, managed, stored, owned and even paid for, will not only be near-universally welcomed, but also require significant technological complexity and massive shifts in consumers and business' relationships with their wattage and pipelines.

The industry is well on its way toward a more sustainable future. Over the past decade, emissions from fossil fuels dropped by 29%⁶⁾. 2018 was a record-breaking year for the UK in terms of low-carbon electricity generation⁷⁾, and as outlined earlier, coronavirus-induced lockdowns across the globe are also expected to make a considerable dent⁸⁾ in the world's total emissions for the year, albeit under very unusual and trying circumstances.

The UK's energy system has run without coal for 2 months during lockdown, causing some to question whether the last remain coal-fired power stations should now be mothballed for good.

But the UK still relies heavily on oil and gas for power generation, especially at peak times, and the government target to become a zero-carbon nation by 2050 will require huge change.

6) <https://www.carbonbrief.org/analysis-uks-co2-emissions-have-fallen-29-per-cent-over-the-past-decade>

7) <https://www.carbonbrief.org/analysis-uk-electricity-generation-2018-falls-to-lowest-since-1994>

8) <https://www.uea.ac.uk/about/-/covid-19-crisis-causes-17-drop-in-global-carbon-emissions>



Progress in solar and wind power have been significantly faster than expected, due to the massive efforts and undoubtedly the government subsidies available.

Dr Ian Pearson, Futurologist

Whilst the debates on how energy is sourced, such as the role of nuclear fission and fusion as a fall-back for renewable energy will always steal the spotlight, the issues of electricity measurement and management will be the biggest catalysts in our changing day-to-day relationship with energy.

Smart meters may not seem like the most exciting invention of the decade, but consumers have praised the value they have delivered in helping them understand, monitor and reduce their own energy consumption.

Whilst house-by-house reductions in energy usage will have a major national impact, metering technology will be a key enabler

for more complex domestic electricity ecosystems. Where traditionally, homes were merely users, or receivers of electricity, thanks to advancements in home electricity storage and generation (through solar panels and batteries), more homes will be contributing electricity back to the grid and even trading at a local level.

What's more, if people are going to be charging vehicles from their home energy supply, or even charging their homes from stored energy supply in their car's batteries, the importance of metering, controlling and accounting for energy will become even more vital. The whole economics of home electricity supply could be turned on its head.

One significant change we could see soon in the home energy tech space is a move away from cost per kWh packages, toward an outcome based commercial model. These energy subscription packages could lead to greater experimentation when it comes to the kind of energy sources being used in the home, with some providers investing in more renewable sources like solar panels, for instance, on behalf of the customers, in order to meet the agreed quota.

This will open the door toward a future of better energy provision, where we use data to reduce demands on the network at peak times and lower energy production levels at a minimal cost to the consumer.

Rachel Eyres, Client Director and Market Unit Leader (Infrastructure), Expleo UK Quality Business



Conclusion – Listen to the people

Throughout history, attention has fixated on tech that grabs headlines from 3D TVs to delivery drones. But the fact is people get more value from tools like smart meters that can reduce their emissions than home robots that tidy their mess. Businesses and technologists must understand this and focus their efforts on solutions that work reliably and deliver the change people want to see in the world. To reap the benefits of these new technologies, however, they must be developed and adopted in the right way. Quality assurance, trust and security are three key requirements that the technology of the future depends on to succeed.

Our expertise in prioritising a seamless customer experience combined with our ability to create, test, and scale digital solutions and operationalise at

pace, using our automation solutions, means that our customers systems perform reliably.

When it comes to reducing future carbon emissions specifically, greater awareness of personal energy usage, facilitated by appliances like smart meters, and the shift toward electric or battery-powered vehicles are the two areas most likely to positively influence the planet, putting the energy and mobility sectors right at the forefront of this shift.

Over the next ten years, we can expect to see these markets converge into a single stratosphere, with the utilities, charging infrastructure owners, car manufacturers and smart transport companies all having to integrate and collaborate to meet the changing needs of society.

Regardless of whether the world is ahead or behind progress, at Expleo our tried and tested expertise in technology assurance will remain. Whether we're supporting the drive to get Electric Vehicles on the road, or paving the way for renewable energies, we hope to be there making the boldest innovation run reliably.

Stephen Magennis
MD, Expleo UK Quality Business

Talk to us

Expleo is the digital partner of the future for energy and electric vehicle companies. As energy and mobility markets combine, our mission is to remove the complexity from systems integration.

Partners rely on our end-to-end expertise to coordinate a seamless customer experience. Our track record of delivery in energy retail & billing systems, smart metering, grid control vehicle and charging systems (including V2G tech), means your systems will keep working as they should.

With Expleo, you see the whole picture.



info_uk@expleogroup.com



+44 2074 484 620



expleogroup.com

Meet our experts



Rachel Eyres

Client Director and Market Unit Leader – Infrastructure, Expleo UK

Rachel has over 20 years experience in the energy and utilities sector, working with many different customers and learning along the way about energy retail, smart metering, power distribution/ smart grids and smart cities. She is very interested in the future development of the energy markets and sees big changes on the horizon, caused by the increasing pace of technology change, the march towards reduced carbon emissions, and the convergence of markets and sectors. At Expleo she looks after central market change and smart grids (the “DSO transition”).



Stephen Magennis

MD, UK Quality Business, Expleo

Stephen is the Managing Director of Expleo UK Quality Business. Expleo is the technology consulting partner of choice for innovative companies seeking to create value through their business and IT programmes. Stephen is responsible for the strategic business planning and execution of Expleo’s UK growth strategy. He has 25 years experience in the IT Industry with more than 10 years of senior management experience within Expleo managing company growth in industry sectors including energy & utilities, financial services, public sector and manufacturing.



Dr Iain Pearson,

Futurologist

Dr Iain Pearson was BT’s former Futurologist from 1991 – 2007 and now runs Futurizon, a futures institute. Iain, with 1800+ inventions to his name, is a leading futurist, keynote and after dinner speaker adept at educating technology specialists or explaining complex technologies to business executives in everyday language.

(expleo)

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